

August 09, 2017

Tom Moe
USS Corporation
P.O. Box 417
8771 Park Ridge Dr
Mountain Iron, MN 55768

RE: Project: NPDES Line 3 weekly
Pace Project No.: 1292116

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on July 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods
melisa.woods@pacelabs.com
(218)742-1042
Project Manager

Enclosures

cc: Bethany Given, USS Corporation
Terri Sabetti, NTS



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: NPDES Line 3 weekly

Pace Project No.: 1292116

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification UST-107

Alaska Certification UST-107

California Certification #2973

California Certification #2973

Montana Certificate #CERT0103

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

California Certification #2973

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SAMPLE SUMMARY

Project: NPDES Line 3 weekly

Pace Project No.: 1292116

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1292116001	WS-002 Scrubber Make-up	Water	07/19/17 08:35	07/19/17 13:15
1292116002	WS-003 Thickner Overflow	Water	07/19/17 08:25	07/19/17 13:15

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SAMPLE ANALYTE COUNT

Project: NPDES Line 3 weekly

Pace Project No.: 1292116

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1292116001	WS-002 Scrubber Make-up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1292116002	WS-003 Thickner Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V

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ANALYTICAL RESULTS

Project: NPDES Line 3 weekly

Pace Project No.: 1292116

Sample: WS-002 Scrubber Make-up		Lab ID: 1292116001		Collected: 07/19/17 08:35		Received: 07/19/17 13:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Calcium, Dissolved	114	mg/L	5.0	0.91	10	07/21/17 11:02	07/24/17 12:53	7440-70-2	
Magnesium, Dissolved	240	mg/L	5.0	0.68	10	07/21/17 11:02	07/24/17 12:53	7439-95-4	
Total Hardness, Dissolved	1270	mg/L	100	5.0	10	07/21/17 11:02	07/24/17 12:53		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	917	mg/L	20.0	10.0	10		07/29/17 09:05	14808-79-8	

Sample: WS-003 Thickner Overflow		Lab ID: 1292116002		Collected: 07/19/17 08:25		Received: 07/19/17 13:15		Matrix: Water	
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered		Analytical Method: EPA 200.7 Preparation Method: EPA 200.7							
Calcium, Dissolved	889	mg/L	5.0	0.91	10	07/21/17 11:02	07/24/17 12:56	7440-70-2	
Magnesium, Dissolved	28.9	mg/L	5.0	0.68	10	07/21/17 11:02	07/24/17 12:56	7439-95-4	
Total Hardness, Dissolved	2340	mg/L	100	5.0	10	07/21/17 11:02	07/24/17 12:56		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	1610	mg/L	40.0	20.0	20		08/07/17 20:22	14808-79-8	

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QUALITY CONTROL DATA

Project: NPDES Line 3 weekly

Pace Project No.: 1292116

QC Batch: 120181

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1292116001, 1292116002

METHOD BLANK: 476787

Matrix: Water

Associated Lab Samples: 1292116001, 1292116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.091	07/24/17 11:37	
Magnesium, Dissolved	mg/L	ND	0.50	0.068	07/24/17 11:37	

LABORATORY CONTROL SAMPLE: 476788

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	51.6	103	85-115	
Magnesium, Dissolved	mg/L	50	51.1	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 476789

476790

Parameter	Units	1292244001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	35.9	50	50	87.0	87.1	102	102	70-130	0	20	
Magnesium, Dissolved	mg/L	89.9	50	50	143	140	106	100	70-130	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 476791

476792

Parameter	Units	1292244003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	36.3	50	50	88.5	88.1	104	104	70-130	0	20	
Magnesium, Dissolved	mg/L	90.6	50	50	142	142	102	102	70-130	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: NPDES Line 3 weekly

Pace Project No.: 1292116

QC Batch: 121060

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1292116001

METHOD BLANK: 480469

Matrix: Water

Associated Lab Samples: 1292116001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	07/29/17 07:43	

LABORATORY CONTROL SAMPLE: 480470

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	51.5	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 480471

480472

Parameter	Units	1292041002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	254	250	250	519	520	106	107	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 480473

480474

Parameter	Units	1292016004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	14.2	100	100	121	121	106	107	90-110	0	20	

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QUALITY CONTROL DATA

Project: NPDES Line 3 weekly

Pace Project No.: 1292116

QC Batch: 122027

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1292116002

METHOD BLANK: 484297

Matrix: Water

Associated Lab Samples: 1292116002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	08/07/17 16:52	

LABORATORY CONTROL SAMPLE: 484298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	50.3	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 484299 484300

Parameter	Units	1293342001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	50.8	50	50	103	104	105	106	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 484301 484302

Parameter	Units	1292436001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	25.6	50	50	78.7	79.9	106	109	90-110	2	20	

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QUALIFIERS

Project: NPDES Line 3 weekly

Pace Project No.: 1292116

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES Line 3 weekly


Pace Project No.: 1292116

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1292116001	WS-002 Scrubber Make-up	EPA 200.7	120181	EPA 200.7	120218
1292116002	WS-003 Thickner Overflow	EPA 200.7	120181	EPA 200.7	120218
1292116001	WS-002 Scrubber Make-up	EPA 300.0	121060		
1292116002	WS-003 Thickner Overflow	EPA 300.0	122027		

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SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	Jason K Benson
SIGNATURE of SAMPLER:	<i>Jason K Benson</i>
DATE Signed:	7/19/17
TEMP in C	
Received on Ice (Y/N)	
Custody Sealed Cooler (Y/N)	
Samples Intact (Y/N)	

	Document Name:	Document Revised: 15Mar2016
	Sample Condition Upon Receipt Form	Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office



Client Name:

Project #:

WO#: 1292116

PM: MMW

Due Date: 08/02/17

CLIENT: USS CORP

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client
☐ Commercial ☐ Pace ☐ Other:

Tracking Number:

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☐ No Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.9 Cooler Temp Corrected °C: 2.2 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA
Temp should be above freezing to 6°C Correction Factor: 10.5 Date and Initials of Person Examining Contents: Bm 7/19/17

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes Date/Time/ID/Analysis Matrix: WT		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted:

Date/Time:

Comments/Resolution:

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Date: 7/19/17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)